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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/516,703	12/02/2004	Hisao Sato	08228/061001	6746

22511 7590 03/13/2007
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EXAMINER

TRAN, TAN N

ART UNIT	PAPER NUMBER
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2826

SHORTENED STATUTORY PERIOD OF RESPONSE	MAIL DATE	DELIVERY MODE
3 MONTHS	03/13/2007	PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

If NO period for reply is specified above, the maximum statutory period will apply and will expire 6 MONTHS from the mailing date of this communication.

Office Action Summary

Application No.

10/516,703

Applicant(s)

SATO ET AL.

Examiner

TAN N. TRAN

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 02 February 2007.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-21 is/are pending in the application.
- 4a) Of the above claim(s) 11-17, 19 and 21 is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1, 2, 10, 18 and 20 is/are rejected.
- 7) ☒ Claim(s) 3-9 is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date. _____ |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| Paper No(s)/Mail Date <u>See Continuation Sheet</u> | 6) <input type="checkbox"/> Other: _____ |

Continuation of Attachment(s) 3). Information Disclosure Statement(s) (PTO/SB/08), Paper No(s)/Mail Date :12/02/04;06/15/06;10/24/06;02/02/07.

DETAILED ACTION

Election/Restrictions

1. Applicant's election of Subspecies A, claims 1-10,18,20 is acknowledged. Because applicant did not distinctly and specifically point out the supposed errors in the restriction requirement, the election has been treated as an election without traverse (MPEP § 818.03(a)).

Claim Rejections - 35 USC § 102

2. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

Claims 1,2,10,20 are rejected under 35 U.S.C. 102(b) as being anticipated by Ozaki et al. (JP-2000-299532).

With regard to claims 1,10, Ozaki et al. disclose a substrate; a first superlattice layer 4 which is formed above the substrate and in which an n-type AlGa_N layer and an n-type Ga_N layer are alternately layered; a multiple quantum well layer 6 which is formed above the first superlattice layer 4 and in which a Ga_N-based quantum well layer and a Ga_N-based quantum barrier layer are alternately layered; and a second superlattice layer 9 which is formed above the multiple quantum well layer 6 and in which a p-type AlGa_N layer and a p-type Ga_N layer are

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alternately layered. (Note lines 1-7, paragraph 0067, page 13; lines 1-6, paragraph 0069, page 13; lines 1-7, paragraph 0072, page 14, fig. 1 of Ozaki et al.).

With regard to claim 2, Ozaki et al. disclose a buffer layer, a first GaN-based layer 2 which is formed above the buffer layer, and an n-type GaN-based layer 3 which is formed above the first GaN-based layer 2 are provided between the substrate and the first superlattice layer 4; a second GaN-based layer 5 is provided between the first superlattice layer 4 and the multiple quantum well layer 6; and a p-type GaN layer 10 is provided above the second superlattice layer 9. (Note fig. 1 of Ozaki et al.).

With regard to claim 20, Ozaki et al. disclose an n electrode 21 which is connected to the n-type GaN-based layer 3; a p electrode 20 which is connected to the p-type GaN-based layer 10; and a power supply which applies a voltage between the n electrode 21 and the p electrode 20. (Note fig. 1 of Ozaki et al.).

Claim Rejections - 35 USC § 103

3. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claim 18 is rejected under 35 U.S.C. 103(a) as being unpatentable over Ozaki et al. (JP-2000-299532).

Applicant's claim 18 does not distinguish over Ozaki et al. reference regardless of the process used to form the buffer layer is formed on the substrate; the first GaN-based layer, the n-type GaN-based layer, and the first superlattice layer are sequentially formed on the buffer layer; the second GaN-based layer and the multiple quantum well layer are sequentially formed on the first superlattice layer; and the second superlattice layer and the p-type GaN-based layer are sequentially formed on the multiple quantum well layer because only the final product is relevant, not the process of making such as "higher or lower temperature".

Note that a "product by process" claim is directed to the product per se, no matter how actually made, In re Hirao, 190 USPQ 15 at 17 (footnote 3). See also In re Brown, 173 USPQ 685; In re Luck, 177 USPQ 523; In re Wertheim, 191 USPQ 90 (209 USPQ 554 does not deal with this issue); In re Fitzgerald, 205 USPQ 594, 596 (CCPA); In re Marosi et al., 218 USPQ 289 (CAFC); and most recently, In re Thorpe et al., 227 USPQ 964 (CAFC, 1985) all of which make it clear that it is the final product per se which must be determined in a "product by process" claim, and not the patentability of the process, and that, as here, an old or obvious product produced by a new method is not patentable as a product, whether claimed in "product by process" claims or not. Note that Applicant has burden of proof in such cases, as the above case law makes clear.

Allowable Subject Matter

4. Claims 3-9 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

Conclusion


5. Any inquiry concerning this communication or earlier communications from the examiner should be directed to TAN N. TRAN whose telephone number is (571) 272-1923. The examiner can normally be reached on 8:30-5:00PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, PURVIS SUE can be reached on (571) 272-1236. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

TT

Jan 2007


LEONARDO ANDUJAR
PRIMARY EXAMINER